

REMARKS

Claims 1-16 are pending. Claims 12-16 were withdrawn with traverse in response to a restriction requirement. Claims 1-11 stand rejected.

In the present application, the Examiner has further grouped the claims as follows:

- I. Claims 1- 11 "drawn to a process for forming a silicon containing film, classified in class 438, subclass 216";
- II. Claims 12-14 "drawn to a process for low temperature (200-600) chemical vapor deposition of silicon containing film, classified in class 438, subclass 478+"; and
- III. Claims 15-16 "drawn to a reactive mixture compound, classified in class 428, subclass 323".

In the teleconference of March 3, 2005, Applicants requested that the claims in group I, or claims 1-11, be elected with traverse. As a result of this election, Applicants are withdrawing the claims in Groups II and III but reserving their rights under 35 USC § 121 to file a divisional application for the non-elected claims and/or request for rejoinder upon allowance of the elected claims.

Applicants respectfully traverse the restriction requirement on the following basis. If the search and examination of the entire application can be made without serious burden, the Examiner must examine it on the merits, even though it includes claims to independent or distinct inventions. MPEP §803. Applicants respectfully submit that there would be no serious burden on the Patent Office to examine in this application all of the present claims because the subject matter of the claims is sufficiently related that a search of the claims in any one Group would encompass a search for the subject matter of the other Group. Applicants specifically note that the claims in Group I and II, which relate to "a process for forming a silicon-containing film" and "a process for the chemical vapor deposition of a silicon-containing film" respectively, reside within the same class, or class 438. Applicants respectfully request, at the minimum, that the claims in Group II be reinstated.

Claims 1 through 11 are pending and stand rejected under § 103(a) as being allegedly unpatentable over U. S. Pat. No. 5,763,021 ("Young") in view of U. S. Pat. No. 5,645,947 ("Hirooka"). Applicants respectfully traverse the § 103(a) rejections of the claims because the Examiner has failed to establish a *prima facie* case of obviousness. In order to

establish a *prima facie* case of obviousness, there must be a teaching, motivation or suggestion within the references themselves to select and make the combination as claimed. However in the present office action, the references that form the basis for the obviousness rejections teach away from the making the combination. MPEP § 2145 states that "[i]t is improper to combine references when the references teach away from their combination."

Young specifically teaches away from its combination with Hirooka et al. Young describes a method for forming a dielectric film by plasma enhanced chemical vapor deposition ("CVD") by introducing a silicon source, an oxygen source, a fluorine source, and, in certain instances, a carbon-containing or nitrogen-containing halogen source into the reaction chamber and igniting a plasma under certain temperature, power, and pressure conditions. See, for example, Young at col. 1, lines 48-50; col. 1, lines 64-69 through col. 2, lines 1-6; col. 3, lines 22-65; col. 4, lines 12-18; col/ 4, lines 33-37; and claim 1. Hirooka et al., by contrast, teaches a non-plasma CVD process which involves introducing separately a precursor formed in a decomposition space (B) and forming activated species in another decomposition space (C) which are, once activated, then introduced into the reaction chamber or deposition space (A). Hirooka et al. specifically teaches away from its combination with Young -or a plasma-enhanced CVD method- in the following passages:

The conventional plasma CVD process, as compared with the conventional CVD process, is complicated in the reaction process to deposit amorphous silicon and involves many unknown things in the reaction mechanism. The film formation in the plasma CVD process is affected by a number of parameters (e.g. substrate temperature, flow rates and mixing ratio of feed gases, pressure during film formation, high-frequency power used, electrode structure, structure of deposition chamber, rate of evacuation, and plasma generation method). ***These various parameters, combined with one another, cause sometimes an unstable plasma, which exerts marked adverse effects on the deposited film.*** In addition, the parameters characteristic of the deposition apparatus must be determined according to the given apparatus, so that it is difficult in practice to generalize the production conditions. (emphasis added) See Hirooka et al. at col. 1, lines 40-55.

An object of the invention is to provide a novel process for forming deposition films ***which is free of the above-noted drawbacks of the plasma CVD process.*** Another object of the invention is to provide a process by which deposition films of good characteristics can be formed at an improved deposition rate ***without utilizing plasma reaction*** in the deposition space (A) for the film formation and additionally the simplification of controlling the film

formation conditions and mass production of the films can be achieved with ease. (emphasis added) See *id.* at col. 2, lines 19-28.

In the process of the invention, the parameters affecting the formation of deposition films are amounts of a precursor and activated species introduced into the deposition space (A), temperatures of the substrate and the space (A), and pressure therein, ***since no plasma is formed therein***. Accordingly, the formation of deposition films is easy to control, and reproducible films can be mass-produced. (emphasis added) See *id.* at col. 2, lines 46-56.

According to the process of the invention, ***the deposition film formed without generation of any plasma in the deposition space (A) suffers from no substantial adverse effect*** of the etching action or some other action, e.g. abnormal discharge action. In addition, more stable production of deposition films becomes possible according to the process of the invention, which is an improved CVD process, by controlling the atmospheric temperature of the deposition space (A) and the temperature of the substrate, as desired. (emphasis added) See *id.* at col. 4, lines 1-9.

According to the plasma CVD process, such treatment of a number of cylindrical substrates in one deposition space would involve problems in the uniformity of the electric discharge and in synergistic effects of complicated production condition parameters, so that ***it has been impossible to produce electrophotographic image forming member in the drum form having uniform deposition films with high reproducibility***. (emphasis added) See *id.* at col. 9, lines 60-67; col. 14, lines 37-45.

Since the cited references teach away from making the combination, the § 103(a) rejections of the claims over the combination of Young and Hirooka et al. is improper. Accordingly, the § 103(a) rejections of the claims should be removed.

SUMMARY

For at least the reasons set forth above, it is respectfully submitted that the above-identified application is in condition for allowance. Favorable reconsideration and prompt allowance of the claims are respectfully requested.

Should the Examiner believe that anything further is desirable in order to place the application in even better condition for allowance, the Examiner is invited to contact Applicants' undersigned Attorney at the telephone number listed below.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Rosaleen P. Morris-Oskanian".

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